RESPONSE

Claims Status

Claims 1-20 were originally filed in this application. A first office action was issued on July 19, 2004 rejecting claims 1, 2, 5-14, 17, 18, and 20 and objecting to claims 3, 4, 15, 16, and 19. In response, on January 21, 2005, Applicants amended claims 1, 13, 16, 18 and 19 and added new dependent claims 21-24. A final office action was issued on June 28, 2005, in which claims 1-24 were rejected. In response, on December 28, 2005, Applicants filed a Notice of Appeal, along with a response. On May 30, 2006, Applicants submitted a Request for Continued Examination. On July 10, 2006, a non-final office action issued, again rejecting claims 1-24. In a response filed January 10, 2007, Applicants amended claims 1, 3, 13, and 18 and cancelled claims 2, 14, and 19. On January 31, 2007, a final rejection issued, rejecting claims 1, 3-13, 15-18, and 20-24, and objecting to claims 3, 4, and 16. In a response filed April 30, 2007, along with another Request for Continued Examination, Applicants cancelled claims 1, 3-13, 15 -18, and 20-24 and added new claims 25 – 44. In the present office action, claims 25 - 44 have been rejected. In this Amendment and Response, claims 26, 27 and 37 have been amended for formatting purposes.

Claim Rejections

In the current Action, claims 25, 30, and 37 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,370,138 to Kim et al. ("Kim").

Claims 26, 27, 32, 33, and 36 - 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kim and further in view of U.S. Patent No. 5,798,732 to Eshenbach ("Eshenbach").

Claims 28 and 40 were rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Kim and Eshenbach and further in view of U.S. Patent No. 6,591,370 to Lovett et al. ("Lovett").

Claim 29 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kim and further in view of Applicant-admitted prior art ("AAPA").

Claim 31 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kim and further in view of U.S. Patent No. 6,735,711 to Lutz ("Lutz").

Claims 34 and 41 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kim and further in view of U.S. Patent No. 6,678,781 to Domon ("Domon").

Claim 35 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kim and further in view of Weidemann, "Application Critical Parameters for Rubidium Standards" ("Weidemann").

Claim 42 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kim and further in view of U.S. Patent Application Publication No. 2006/0013223 to Lym et al. ("Lym").

Claim 43 was rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Kim and Lym and further in view of Lovett.

Claim 44 was rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Kim and Lym and further in view of Domon.

For the following reasons, Applicants respectfully submit that the claims are patentable over the cited art.

Claim Rejections Under 35 U.S.C. §103(a)

Independent Claims 25 and 37

Independent claims 25 and 37 recite, in part, a method and system, respectively, for distributing a reference time in a network having a plurality of nodes. A network-wide time signal is generated using a reference time generator, and the network-wide time signal is then distributed over the network to the plurality of nodes. At each node, the network-wide time signal is converted to a local synchronization signal, and synchronization of the timing of each node is performed using the local synchronization signal. As a result, the claimed method and system allow for the conversion of the network-wide time signal to a local synchronization signal as required by a respective application. See, for example, paragraphs [0007] and [0008] of Applicants' published application.

Kim describes no such conversion of a network-wide time signal to a local synchronization signal at each of a plurality of nodes. Generally, Kim describes an ATM switch interface apparatus for frame relay network interworking. (Kim, Abstract.) In contrast to the requirements of the present claims, Kim does not allow for conversion of the network-wide time signal at each of a plurality of nodes. Instead, Kim sends a time signal to a single frame relay

clock distribution apparatus (FCDA), and from there, the same signal is sent to a plurality of frame relay interface apparatus (FRIA). (Kim, FIG. 1 and col. 3, ln. 35-55). Therefore, the conversion of the network-wide time signal to a local synchronization signal does not occur at each respective node, as claimed. Kim, in other words, does not teach or suggest converting, at each respective node, a network-wide time signal to a local synchronization signal as required by a respective application.

The Examiner himself concedes that Kim differs from the present invention in that Kim's FCDA provides a single point of failure. He argues, however, that it would have been obvious to one of ordinary skill in the art "to modify the system of Kim . . . by placing an FCDA (fig. 1 box 300) in each FRIA (fig. 1 box 100) and transmitting the network-wide time signal to each of the plurality of FRIAs." According to the Examiner, such a "modification would benefit the system by eliminating a single point of failure."

We respectfully submit that the proposed modification would not, in fact, eliminate a single point of failure; in fact, it would provide no benefit to Kim's system. In effect, the Examiner has invented both a problem and a solution in order to justify the rejection. In Kim's system, the FRIAs are implemented "for performing a channelized/ unchannelized 4 DSI/E1 interface, Q.922 core function, a frame-to ATM cell conversion, a network management hierarchy protocol process, an OAM and PVC state management function, and a frame relay/ATM interworking core function." (Kim, col. 3, ln. 36 – 44.) The FCDA, by contrast, serves the entirely different function of "receiving a system clock from the ATM switch … and generating a clock signal which is used for an ATM switch interface apparatus and a frame relay interface apparatus." (*Id.* at col. 3, ln. 44 – 48). If, as the Examiner suggests, an FCDA were to be placed in each FRIA, each FRIA would receive a system clock from the ATM switch and generate a clock signal which is used for an ATM switch interface apparatus and FRIA — a condition that is not only redundant, but would result in multiple and potentially inconsistent clock signals in the system. Furthermore, each of these generated clock signals would presumably be sent to each of the other FRIAs, adding further complexity and the potential for inconsistency.

For these reasons, the functionality of the FCDA is deliberately kept separate from that of the FRIA in Kim. The Examiner's proposed modification would replace the remote chance of failure at a single point with the substantial likelihood of failure at multiple points, and add

considerable complexity in the process. Accordingly, we respectfully submit that independent claims 25 and 37, as well as those claims that depend therefrom, are patentable over the cited reference.

Claim 30

Claim 30 adds an additional narrowing element to independent claim 25, and is therefore patentable over Kim for at least the reasons set forth above.

Claims 26, 27, 32, 33, and 36-39

Claims 26, 27, 32, 33, and 36-39 each add additional narrowing elements to independent claims 25 and 37, and are therefore patentable over the cited reference for at least the reasons set forth above. Furthermore, the deficiencies of Kim as described above are not cured by Eshenbach, as Eshenbach does not teach or suggest converting, at each respective node, a network-wide time signal to a local synchronization signal as required by a respective application.

Claims 28 and 40

Claims 28 and 40 each add additional narrowing elements to independent claims 25 and 37, and are therefore patentable over the cited references for at least the reasons set forth above. Furthermore, the deficiencies of Kim and Eshenbach as described above are not cured by Lovett, as Lovett neither teaches nor suggests converting, at each respective node, a network-wide time signal to a local synchronization signal as required by a respective application.

Claim 29

Claim 29 adds an additional narrowing element to independent claim 25, and is therefore patentable over the cited references for at least the reasons set forth above. Furthermore, the deficiencies of Kim as described above are not cured by AAPA, as AAPA neither teaches nor suggests converting, at each respective node, a network-wide time signal to a local synchronization signal as required by a respective application.

Claim 31

Claim 31 adds an additional narrowing element to independent claim 25, and is therefore patentable over the cited references for at least the reasons set forth above. Furthermore, the deficiencies of Kim as described above are not cured by Lutz, as Lutz neither teaches nor suggests converting, at each respective node, a network-wide time signal to a local synchronization signal as required by a respective application.

Claims 34 and 41

Claims 34 and 41 each add additional narrowing elements to independent claims 25 and 37, and are therefore patentable over the cited references for at least the reasons set forth above. Furthermore, the deficiencies of Kim as described above are not cured by Domon, as Domon neither teaches nor suggests converting, at each respective node, a network-wide time signal to a local synchronization signal as required by a respective application.

Claim 35

Claim 35 adds an additional narrowing element to independent claim 25, and is therefore patentable over the cited references for at least the reasons set forth above. Furthermore, the deficiencies of Kim as described above are not cured by Weidemann, as Weidemann neither teaches nor suggests converting, at each respective node, a network-wide time signal to a local synchronization signal as required by a respective application.

Claim 42

Claims 42 adds additional narrowing elements to independent claim 37, and is therefore patentable over the cited references for at least the reasons set forth above. Furthermore, the deficiencies of Kim as described above are not cured by Lym, as Lym neither teaches nor suggests converting, at each respective node, a network-wide time signal to a local synchronization signal as required by a respective application.

Claim 43

Claim 43 adds additional narrowing elements to independent claim 37, and is therefore patentable over the cited references for at least the reasons set forth above. Furthermore, the deficiencies of Kim and Lym as described above are not cured by Lovett, as Lovett neither teaches nor suggests converting, at each respective node, a network-wide time signal to a local synchronization signal as required by a respective application.

Claim 44

Claim 44 adds additional narrowing elements to independent claim 37, and is therefore patentable over the cited references for at least the reasons set forth above. Furthermore, the deficiencies of Kim and Lym as described above are not cured by Domon, as Domon neither teaches nor suggests converting, at each respective node, a network-wide time signal to a local synchronization signal as required by a respective application.

CONCLUSION

Applicants respectfully request that the Examiner reconsider the application and claims in light of this Amendment and Response, and submit that claims 25-44 are in condition for allowance.

Respectfully submitted,

Date: May 1, 2008
Reg. No. 33,497

/Steven J. Frank/

Steven J. Frank
Attorney for Applicants
Goodwin Procter LLP
Exchange Place
Boston, Massachusetts 02109
Customer No. 051414

Tel. No.: (617) 570-1241
Fax No.: (617) 523-1231